

## **REMARKS**

Claims 1-43 are pending in the present application. Claim 41 has been withdrawn from consideration and has been subsequently canceled herein without prejudice. Claims 18-21, 23-28, 34, 36 and 37 stand rejected and Claims 22, 35 and 38-40 have been objected to. Claims 1-17, 29-33, 42 and 43 have been allowed. Claims 18-20, 22, 23, 25 and 38-40 have been amended. New Claims 44-51 have been added herein. Reconsideration is respectfully requested in light of the present amendments and following remarks. The above amendments and following remarks are believed to be fully responsive to the outstanding Office Action and to render all claims at issue patentably distinct over the references cited.

The Examiner has objected to Claim 40 due to a typographical informality. This objection is respectfully traversed. Notwithstanding, the noted item in Claim 40 has been revised in a non-narrowing fashion such that all of the claim elements therein should be given their full range of equivalents when interpreted. Accordingly, it is respectfully requested that the instant objection be withdrawn.

Claim 38 stands rejected under 35 U.S.C. §112, second paragraph. This rejection is respectfully traversed. Notwithstanding, the antecedent basis for Claim 38 has been revised in a non-narrowing manner such that all equivalents should be applicable to all claim elements when interpreted. Accordingly, it is respectfully requested that the instant rejection be withdrawn.

The Examiner has rejected 18-20 and 25-28 under 35 U.S.C. §102(b) as allegedly being anticipated by Horton (U.S. 4,288,691). This rejection is respectfully traversed. It is believed that the originally filed claims are patentably distinct over the

cited reference. Notwithstanding, independent Claim 18 has been amended to recite that the pulses selectively cleave atomic bonds in the sample. Support for this amendment can be found within Applicants' originally filed Claim 19. This combination of elements, especially noting the cleavage of atomic bonds, is not disclosed, suggested or motivated in the cited reference. These differences are significantly advantageous with regard to the present invention, as can be observed within Applicants' originally paragraphs [0010], [0011] and [0066]-[0069].

Furthermore, independent Claim 25 has been amended at the end by adding "in an automatic manner" to highlight the "substantially optimizing" of the subsequent beam pulse characteristic. The cited reference does not teach, suggest or motivate any type of optimization of pulse characteristics, and especially does not disclose automatically optimizing such. Support for this amendment can be found within Applicants' originally filed paragraphs [0010], [0010] and [0046]-[0052]. This difference is significant as discussed in the originally filed specification at paragraph [0007]. Accordingly, it is respectfully requested that the instant rejection be withdrawn.

Claims 21, 23, 24, 34, 36 and 37 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Horton in view of Futami et al. (U.S. 6,573,493) and Sucha et al. (U.S. 6,723,991). This rejection is respectfully traversed. It is believed that the originally filed claims are patentably distinct over the cited references. For example, independent Claim 34 emits the pulse upon living tissue. In contrast, the cited references do not teach, suggest or motivate the claimed combination of elements, especially where non-linear transitions are controlled when the pulse is emitted upon living tissue, as claimed.

In contrast, U.S. Patent No. 6,042,603 teaches away from the presently claimed invention and also demonstrates the secondary consideration of nonobviousness - a long sought after but unfulfilled need. For example, column 2, lines 20-36 and column 3, lines 34-43, of the '603 patent states that conventional knowledge presents "strong evidence that the optical radiation used in common treatment regimes based on linear optical excitation of photosensitive molecular agents can itself produce disease and other undesirable side effects. Furthermore, a less than desirable penetration depth has plagued most efforts at linear optical excitation of molecular therapeutic agents. . . . In fact, in virtually all examples of the use of linear optical excitation for molecular transformation are plagued by fundamental performance limits that are attributable to undesirable absorption and scatter of the incident optical radiation by the surrounding matrix, poor specificity in excitation of probe molecular species, and a lack of suitable physical mechanisms for precise control of the extent and depth of activation." It is noteworthy that the '603 patent does not attempt to overcome these shortcomings by the invention of the present application.

By comparison, it is believed that the present invention will overcome the significant disadvantages of the prior approaches; see for example at least paragraphs [0074]-[0076] of the present application. Moreover, a full range of equivalents should be provided for all of the elements of at least Claims 34-40 when interpreted since these arguments or amendments are believed to be of a non-narrowing nature.

Additionally, there is no suggestion or motivation to combine the cited references as proposed by the Examiner. For example, column 10, lines 14 and 15, of Futami et al. discloses that "sensitivity [of a nanosecond pulsed laser] is insufficient, making

detection impossible” and that the wave length of the laser light is fixed (see column 17, lines 22 and 23 of Futami et al.), while Horton teaches a laser pulse duration of approximately two microseconds at column 2, lines 55 and 56. The Examiner appears to be improperly employing hindsight reasoning by using the present invention as a template in “cherry picking” various elements from otherwise uncombinable references. Accordingly, it is respectfully requested that the instant rejection be withdrawn.

The elements of the original Claim 18 have been essentially added to the objected to dependent Claim 22. The elements of the original Claim 34 have been essentially added to the objected to dependent Claims 38, 39 and 40, but in a somewhat broadening manner. Withdrawn, independent Claim 41 has been cancelled herein, but the restriction is still traversed. Furthermore, all of the newly added claims fall within the elected claim group and should be examined on their merits. Finally, the reasons for allowability are respectfully traversed, in part; while these claims are allowable, they are so due to the entire novel and nonobvious combination of elements as recited in the noted claims and not due to any one claim element in particular. It is also noteworthy that Claim 42 does not use “means for” language under 35 U.S.C. §112, paragraph 6.

In view of the instant amendments, it is submitted that the present application is in condition for allowance. Accordingly, it is requested that the Examiner pass the case to issue at his/her earliest convenience.

Respectfully submitted,

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